





# ONTARIO FISH AND WILDLIFE REVIEW

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ONTARIO

DEPARTMENT OF LANDS AND FORESTS

HON. RENE BRUNELLE, MINISTER

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# ONTARIO FISH AND WILDLIFE REVIEW

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## THE COVER

Our cover photographs by Bill Love feature our author, H.R. Timmerman, and a black duck, trapped and banded at the Lakehead. For further views and reviews, please turn to Page 3.

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### Fact or Fancy

In this modern age, proper management of fish and wildlife resources becomes increasingly important. A burgeoning force of highly mobile sportsmen now search for good hunting and fishing – and contend not only with each other, but also with pollution, posting, urban sprawl, shoreline development and modern agricultural methods.

A portion of the annual fish and wildlife crop can be taken without damaging populations. With light use, and harvests well below the allowable maximum, faulty management decisions seldom damage resources. Over-protection has often occurred with loss of potential recreation. Now, to use our resources wisely and provide the greatest possible amount of fish and wildlife recreation, management decisions must hit closer to the mark.

Facts are needed. The major ingredient in any recipe for sound fish and wildlife management is a generous supply of reliable information.

Facts are essential on population trends, effects of fishing and hunting versus natural mortality, habitat conditions, diseases, parasites, effects of weather – ad infinitum or so it sometimes seems. Frequently, the same basic information must be collected year after year. Tiresome, perhaps; necessary – yes.

Lacking facts, decisions must be based on opinions. Now, there is nothing wrong with opinions, since most on fish and wildlife are formed from experience afield. Unfortunately, this experience may not reflect general conditions. Perhaps yours was the only fishing party “skunked” three days running; or the only deer camp in the county to fill your count! The experiences of hundreds of sportsmen must be tallied before the true facts of the harvest are evident.

Yes, opinions are fine, but absence of facts closed Ontario’s moose season in 1949 and 1950. Only a few years later, new aerial census techniques “discovered” an estimated 125,000 moose. This herd provided recreation for over 70,000 hunters last year.

How much good angling was lost in years past because human emotion demanded numerous fish sanctuaries and closed seasons, often in prime fishing waters? The results? Not more fish, not bigger fish – but waste and lost angling opportunities.

Fact or Fancy? We’ll take facts.

## Postscript

Each year the Department receives many messages from interested anglers about fishing seasons. In recent years, since the traditional brook trout opening date of May the First has been advanced, the number of letters supporting or opposing this change has increased. Carl Monk's article in the summer issue of the Review described the "pros" and "cons" of an early brook trout season.

With our attention focussed on the opening day debate, it may be understood how unprepared we were to receive a criticism of the customary closing date of September fifteenth!

Not only that; the plea of the aging angler (and we are all aging with him) was not in emotional prose, but in moving metre.

We're not suggesting that terse verse is more effective than prodding prose, but it does create a more contemplative spell -----

### SEPTEMBER FIFTEENTH

*Lovliest of fish, the brook trout now  
Is flushed with crimson 'neath the bough  
Which overhangs the shallow pool  
Where summer water runs so cool.*

*Now, of my three score years and ten,  
Forty will not come again  
And, take from seventy springs two score,  
It only leaves me thirty more.*

*And, since to cast the floating fly,  
Thirty autumns soon go by,  
This should be sufficient reason  
To sensibly extend the season.*

*"Sorry about that, Houseman"*

G.J. Wood  
TORONTO.

## LAKEHEAD HARBOUR DUCK BANDING

*By H.R. Timmerman*

*Biologist, Port Arthur Forest District*

*(Photos by the Author)*

Every summer, from the northern United States to the far Arctic, wildlife workers capture waterfowl and affix light, serially numbered bands to their legs. Eskimos drive flightless geese into drive traps on Southampton Island; teams of Canadian and American banders use helicopters to herd "honkers" at Povungnituk in northern Quebec; airboats, with bright banks of floodlights, snake through rush beds, and roosting ducks, mesmerized by the bright light, are captured with dip nets.

Ontario banders are active. Fish and Wildlife staff, assisted by naturalists and sportsmen, are responsible for a large proportion of the ducks banded in eastern North America in the past several years. In 1965, over 11,000 ducks were banded in Ontario.

Why band ducks? Why spend money and time putting a numbered aluminum band on a duck?

Banding and subsequent recapture of waterfowl has provided information on their movements, and has permitted the mapping of migration routes to and from nesting and wintering grounds. Such findings have led to waterfowl management on a flyway basis, including the establishment of sanctuaries where needed.

Banding provides sex and age data so necessary in estimating yearly production. Bands turned in by hunters reflect the degree of gun mortality. Depending on mortality rates and on the

success of the hatch, seasons and limits may be liberalized or restricted.

Two years ago, a duck banding project was initiated by Port Arthur District staff in the harbour fronting the twin Lakehead cities of Port Arthur and Fort William.

The combination of shelter and food here attracts large numbers of local and migratory ducks. The natural harbour provides good protection against Lake Superior's full wrath of wind and wave. A breakwater controls direct wave action from Thunder Bay.

The Lakehead has been termed the 'granary of western Canada'. Its twenty-six elevators, which hold one hundred and ten million bushels, provide an excellent source of food through spillage and waste. In addition, the regular shoreline is dotted with thick growths of common aquatic plants.

Although city by-laws have prohibited the discharge of firearms for many years, these laws were not enforced until 1960. Up to this time, many waterfowl enthusiasts hunted beneath the shadow of the grain elevators. They even constructed blinds along the breakwater. While many local nimrods still reflect on 'the good old days', the R.C.M.P. and the Lakehead Harbour Police now enforce the municipal restrictions.

The elimination of hunting established the harbour as a 'sanctuary' ideally suited to duck banding. Ducks banded at the site are protected until they dis-



*A trap is placed to take the ducks drawn to elevators by the spillage of grain.*



*Ducks take advantage of cover at Lakehead harbour; traps take advantage of ducks.*



*A good bag of ducks, awaiting banding at the Lakehead harbour.*

perse from the area, when their recovery provides more meaningful information on distribution and movement. All use of the area for wildlife management was not lost when the hunters were forced out, since duck-banders were able to move in.

Initially, in 1964, a single lily pad trap, working on the minnow trap principal, was used to capture ducks. A second trap was erected in the harbour in the fall of 1965. These were baited with grain which encouraged the ducks to paddle through one of the three, six-inch-wide funnel openings in each trap, from where they were unable to escape.

Each duck is examined to determine species, sex and age. Its leg is banded and the bird is then liberated. The information obtained is sent to the Canadian Wildlife Service in Ottawa, who are responsible for migratory waterfowl regulations in Canada.

A copy of banding records is also sent to the U.S. Fish and Wildlife Service in Washington, D.C., where information gathered on thousands of banded waterfowl across the continent is collected and filed for rapid reference.

The Port Arthur District staff, during the first two years of their banding programme, banded 1,597 ducks. Black duck and mallard accounted for approximately 75 per cent; the balance was made up of pintail and blue and green winged teal.

One hundred and thirty-four of the ducks banded at this site have been reported shot by duck hunters as of September 1st, 1966. Recoveries have come from eighteen U.S. States, chiefly in the Mississippi flyway, as well as from Ontario, Manitoba and New Brunswick.

Repeated trapping of local ducks is



*Trapped ducks are herded into a box, handy for banding and examination.*

very frequent. In 1965, a total of 977 birds were banded, yet a total of 2,092 were actually captured. Of the 1,115 recaptures, 414 were taken once, 232 twice, 132 three times or more, and three were trapped 11, 12 and 16 times. Several ducks banded in late August and early September were still being caught as late as mid October.

Forty-six ducks banded elsewhere were also taken during the two banding seasons. These birds were sexed and aged, and their band numbers noted on special forms.

For some yet unknown reason, the harbour attracts a large percentage of adult black ducks. During the past two seasons, more adult blacks have been captured than young of the year; but in all other species, the immatures outnumber the adults nearly four to one.

Because of the importance of waterfowl hunting to the people, the need for up-to-date knowledge is of permanent importance. Duck banding is just one of the ways of acquiring information, and is an integral part of good waterfowl management.

## **BIRDS IN OUR LIVES**

*Bureau of Sport Fisheries and Wildlife*

*United States Department of the Interior, 1966, \$9.00*

The nine dollars gets you a big book—almost quarto size—with 561 pages, lavishly illustrated, with more than fifty different articles by a corresponding number of authors, covering just about every phase in the relationship of birds and people, from birds in art to the modern poultry industry, from the conservation of rare birds to the control of pests, and from hunting game birds to feeding chickadees on your windowsill. There is a lot of scope in fifty-plus articles.

For a huge book that is both beautiful and stuffed with information, the price is cheap beyond belief. That is not all. The articles are concise and well organized, and there is not a dull paragraph. Nothing drags. The sponsorship of the Bureau, the finest wildlife agency in the world, is a guarantee of authenticity and accuracy. The book could have been both right and dull, but the team that produced it have made it as brilliant and lively as the birds themselves.

Obtainable from the Superintendent of Documents, Washington, D.C., 20402.

## **CANADIAN GAME COOKERY**

*by Frances MacIlquham*

*McClelland and Stewart Ltd., Toronto, 1966, pp. 214, \$6.00*

Into each lap some game may fall, but 'twill not make the day dreary if the goodwife hath Mistress MacIlquham for company. Then the occasion will be provided with goodly recipes, even though the game be of the unusual kind. The book is seasoned with ancient lore, and, to cap it all, the master hands of the oven and the spit have unveiled their choicest secrets. -- C.H.D. Clarke.



*Winching up the cage at Nicolston Dam.*

## THE NICOLSTON DAM FISHWAY

By A.A. Wainio

*Biologist, Lake Simcoe Forest District*

*(Photos by Ted Jenkins)*

Most people think of fishways or fish ladders as being built for large spawning runs of salmon on the Pacific Coast. Here in Ontario, far inland from the ocean, we have a fishway which has proved to be very successful in assisting spawning rainbow to ascend a high, sloping mill dam. As well as being far from the ocean, it is over 50 miles upstream from Georgian Bay whence the rainbow trout begin their search for spawning beds in the Nottawasaga River. Above the fishway, the rainbow travel upstream to the headwaters near Orangeville, a further 25 miles.

This fishway at the Nicolston Dam near Alliston, the first to be built by the Department of Lands and Forests was completed in 1961. Since then, two others have been built: one at Delhi, by the Big Creek Conservation Authority; and the other, by the Department, on the Boyne River at Earl Rowe Provincial Park just west of Alliston, only four miles away from the original at Nicolston Dam. Both these fishways were built for rainbow trout.

At the Nicolston fishway, the Department has been tagging trout every spring and fall since 1961. The details of this operation were reported in the spring issue of the 1962 Fish and Wildlife Review.

Many people visiting the fishway for the first time are not sure how it works. Some believe it is a straight channel built right through the dam.

Others expect to see trout ascending the fishway. Most, however, assume that the fishway is a complex structure which somehow lifts and conveys the trout over and around the dam. Many are disappointed to be told that it is merely a channel with a series of low steps in the downstream half—a very simple structure in which the fish are rarely observed. Turbidity and a four-foot depth of swirling, turbulent water effectively conceal the trout.

The fishway is not a complicated structure. It consists of a cement bypass channel sloping gradually between the water levels and below the dam. To slow down the flow of water, baffle-boards are inserted, forming compartments or pools at five-foot intervals. Each baffle has a v-notch centered in the top board, as well as a small square opening in the corner of the bottom board. The water flowing over the notch and through the opening attracts the migrating fish and provides an easy avenue of approach to the next higher level. It is interesting to note that, although the rainbow are well known for their ability to leap, they invariably take the more direct route through the bottom opening.

The flow of water through the fishway is controlled by a valve at the upper end. Between this valve, and the last compartment at the top of the incline, is a movable cage for trapping rainbow. All ascending fish enter this trap. Be-



*Inside the fishway, iron slots provide for baffleboards, one of which is visible below the raised screen. The cage is lifted for banding and examination of fish.*



*Enclosed fishway and mill dam on the Nottawasaga River near Alliston.*

fore the cage is raised, entrance to the cage compartment is effectively blocked at both ends by screens. The cage is raised at varying intervals during the course of the spawning run. As fish are collected, the cage is lifted by a winch, and the fish are removed and sorted. The rainbow trout are examined, tagged and released upstream; any other fish, such as suckers or carp, are returned to the river below the dam.

A unique feature of this fishway is a 12-inch pipe alongside the main channel. A second valve controls the water flow. Down this pipe there is a swift, unimpeded flow of water which is fed into the lower compartment and shoots out into the river through the entrance of the fishway, thus creating much additional current. Since migrating rainbow are influenced by currents,

this greater current at the entrance attracts more rainbow into the fishway.

Spawning suckers also use the fishway. At one time, they caused a serious problem by entering the fishway in large numbers; they clogged the channel and obstructed the rainbow on their migration. However, in the spring of 1965, it was found that by dropping in additional stop logs at the entrance a two-and-a-half-foot falls was created, which effectively stopped the suckers. Rainbow, ranging in length from thirteen to thirty-two inches, had no difficulty in jumping this height.

From mid-April to mid-May, spectators are thrilled by the sight of large rainbow leaping in vain against the high mill dam before finding the entrance to the fishway. They are also interested in



*Tying tag to base of dorsal fin of a rainbow taken from spawning run at fishway.*



*Spectators line the shore to watch rainbow jumping at Nicolston Dam.*

the tagging operations and the results which are explained to them by the officers on the scene.

Over the years, many tags have been returned. Practically all tagged fish caught by anglers have been from the Hockley Valley near Orangeville, far upstream from the Nicolston Dam. A few have been caught in other waters such as the Beaver River at Thornbury. The number of tagged fish that are recaptured at the fishway average about twenty a year. One particular trout, tagged in the spring of 1961, was recaptured at the fishway in the springs of 1962 and 1963.

During the six years that the Department has carried out tagging operations at the fishway, a great deal of data has been accumulated. In the spring, the catch in the fishway averages 300,

while in the fall it averages 125. The age composition of the migrating rainbow has remained constant, most of them being four-years old. A record of lamprey scars shows that the incidence of such marks on rainbow has remained relatively low. With respect to sex ratio, there are more females than males checked at the fishway. Measurement of water level fluctuations and water and air temperatures indicate that rainbow movement is most active when the water temperature reaches 48°F., but that low water levels tend to reduce activity.

The fishway and the tagging operations have received much publicity on television, on radio and in the newspapers. People travel many miles to see the trout jumping at the dam and to watch them being tagged. It is hoped that, by gaining an admiration of the



*Looking down the steps of the fishway from the site of the cage.*

beauty of one single species, the public will become more conscious of the wild-life resources of Ontario.

There is yet much to learn from the tagging operations at the fishway. Will the rainbow using the fishway progressively increase in numbers or will there

be a decrease? Will the sex ratio remain the same? Will the occurrence of lamprey markings decline after the sea lamprey chemical control program? The answers to such questions can be learned from long term studies at the Nicolston Dam fishway.

## FISHING AND FIGURING ON THE KAWARTHAS

*By J.J. Armstrong*

*Biologist, Lindsay Forest District*

The red-and-white patrol boat glided softly towards the cedar-strip skiff, anchored where the sun glinted off the monofilament lines dangling from spinning rods above the sparkling water. Below, chained to the skiff, their tails slowly undulating in time with their breathing, were five large walleye, the morning's catch on Goose Bay of Sturgeon Lake, one of the famous Kawartha Lakes.

The patrol boat carried a triangular pennant bearing the insignia of the Ontario Department of Lands and Forests. As it came closer, it could be seen that both its occupants were dressed alike in dark green tunic and pants, and that both wore peaked caps with a gilded badge, familiar to some as the mark of a "game warden" but correct-

ly identified by many as that of a Conservation Officer.

As the patrol boat eased within arm's length, the exchange of greetings developed into an animated conversation in which the two anglers in the skiff took the leading parts. It was very much like the talk typically attributed to cronies a pot-bellied stove in a country general store.

"Had a musky on this morning..... Must have been forty inches long..... Took my best rapalla and half my line .....Had him right up to the boat..... Then he made a run---Whoosh, he was gone."

"Oh, was he mean-looking!" chirped the woman in the bow.

While the first officer talked to the anglers, the second officer remained

TABLE I CREEL CENSUS ON STURGEON LAKE, 1965

Months	No. Men Fishing	No. Man- Hours	No. Walleye Harvested	Walleye Per Man-Hour	No. Large Mouth	No. Small- mouth	No. Mask- inonge
May	19,704	66,936	16,306	0.24	-	-	-
June	11,805	51,576	12,408	0.24	-	-	-
July	16,290	55,561	6,398	0.12	871	834	533
August	15,822	48,757	8,113	0.17	76	1909	0
September	8,814	25,248	4,674	0.19	0	537	0
TOTALS	72,435	248,078	47,899	0.19	947	3,280	533



*The fact-finding committee adds to the record. Photo by T. Jenkins.*

seated with a clip-board on his knee, busily recording the facts he wanted from the flow of information coming from the skiff. (He didn't record the fish that got away.) If you looked over his shoulder, you could see that he was writing on a printed form, headed "Creel Census, 1965".

This meeting on Goose Bay was representative of hundreds of interviews during the creel census survey on Sturgeon Lake in 1965. The survey was made to obtain an estimate of the total harvest of each game fish species in the lake and, also, an estimate of the fishing pressure.

During the creel census, records were kept on the total number of angler-

boats; the number of anglers in the boats; the length of time each angler fished; and the number of each species of fish captured. Shore-anglers were counted but not interviewed as their numbers were usually small.

Before the census could begin, cognizance had to be made of many problems. The nature of Sturgeon Lake presented difficulties as many of its popular fishing areas contain numerous stumps and logs which slow down census operations. Census clerks could not be located at a few main access points (as on some lakes) because the many cottages and resorts on the lake are all potential points of entry. Night travel was seen to be necessary as anglers are



*A U.S.A. angler cheerfully shows his licence. Photo by W. Masters.*

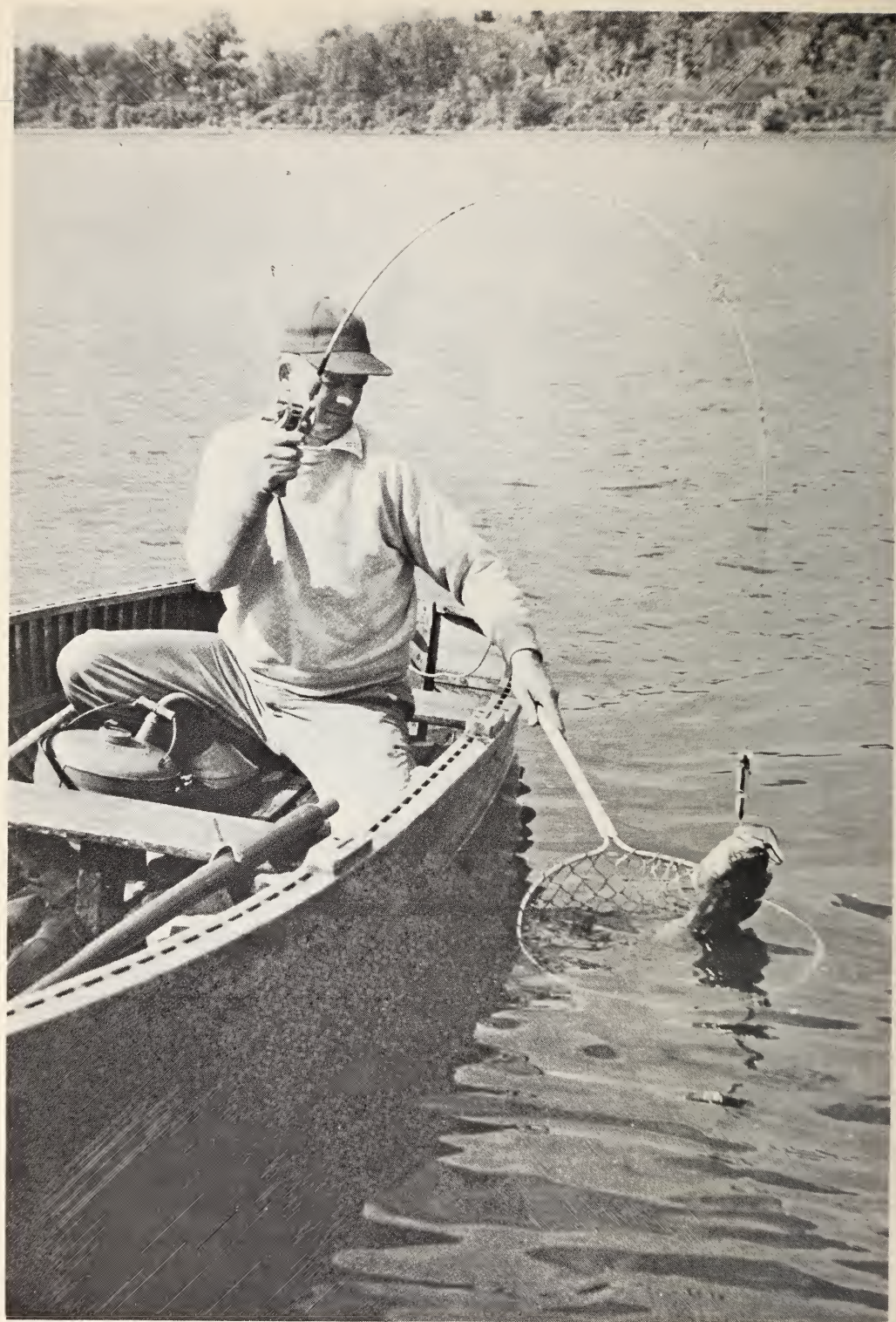
active on Sturgeon Lake at all hours. Night travel, not to mention the counting of boats, is difficult, even hazardous, and sometimes impossible to carry out efficiently.

It was not feasible to conduct the survey continuously over a full 24-hour day throughout the angling season. Therefore, the theory behind the creel census method on Sturgeon Lake was to base final estimates on a random sampling of eight-hour intervals. The intervals were defined so that the sum of three intervals amounted to a 24-hour sampling day.

To analyse all the information collected during the fishing season on Sturgeon Lake, it was found necessary to

establish formulae which would serve as guides. To construct these formulae, it was necessary to make the following assumptions.

1. Fishermen are checked by census clerks in the middle of their fishing activity. The duration of activity is assumed to be twice the average length of time that all anglers contacted had been fishing.
2. The number of anglers remains at a constant level over an eight-hour sampling period. It is assumed that individuals are replaced as they depart by an equal number of anglers who are just commencing their fishing activity.
3. Fish are recaptured at the same



*A lively statistic for Creel Census, 1965.*

rate after an angler has been checked as before he was checked.

4. The rate of angler turnover in an eight-hour period varies inversely as the average length of fishing time, measured in hours.

5. The time interval per sampling day is sixteen hours. It is assumed that most of the fishing occurred within a 16-hour interval covering most of the daylight hours.

The number of anglers on the lake at the time of the creel census was the first estimate to be calculated. This estimate was obtained by multiplying the total number of observed boats by the average number of anglers counted per boat. The number of observed shore-anglers were added to this figure.

Since the number of boats (counted on the lake at various times of the day) was fairly constant, and since anglers do not generally pursue their sport for long periods at a time, it was obvious that the number of boats leaving the lake was replaced by an equal number coming out. Therefore, within a given time period, the number of anglers must be higher than the number counted at the time of the census. Plainly, angler turnover must be considered in calculating the number of anglers during an eight-

TABLE 2    WALLEYE ANGLING

Year	No. Fish Per Man-Hour
1952	0.14
1953	0.15
1955	0.28
1956	0.32
-----	-----
1963	0.20
1964	0.21
1965	0.19

TABLE 3    WALLEYE 1959 YEAR-CLASS

Year	Age	Pigeon Lake	Sturgeon Lake
1963	4	51.6%	45.9%
1964	5	39.0%	21.9%
1965	6	28.3%	*

(Not available at time of writing\*)

hour period. This was accomplished by dividing the average length of each fishing trip (measured in hours) into eight, and by multiplying this figure by the number of anglers counted on the lake at any given time during the eight-hour period.

If, during an eight-hour sampling period, the number of anglers at any time is multiplied by eight, the product is an estimate of the number of man-hours of angling pressure during the sampling period. When this, in turn, is multiplied by the rate of capture of a species, the result is an estimate of the number of this species captured during the sampling period.

The various estimates for the three sampling periods are summed to obtain the estimate for one, 24-hour sampling day. The estimate for the month is obtained by multiplying by the appropriate number of days.

Table 1 presents a summary of the estimates for each month from the opening of the walleye season in May to the end of September. The fishing season in the Kawarthas was extended to the end of November in 1965, but the small number of boats on the lake in October and November did not warrant continuance of the creel census.

In Table 1, it will be noticed that angling success on walleye dropped appreciably during the summer vacation



*Anglers are out in all weather and at all hours. Photo by T. Jenkins.*

months. This same pattern has been observed in previous years in the Kawarthas (although not previously documented) and in other parts of Ontario.

When data on walleye angling success over a number of years are examined (Table 2), it is seen that the general rate of success has remained approximately the same, although there are wide variations in some years. In Table 2, the data for Pigeon and Sturgeon Lakes have been combined except for 1965 which refers to Sturgeon Lake, only.

In other studies on walleye populations, it has been found that very wide

fluctuations have occurred because of the abundance of one year-class. Table 3 presents data on the frequency of occurrence of walleye hatched in Pigeon and Sturgeon Lakes in 1959, as determined by netting surveys. It is expected that the 1959 class will continue to contribute to the fishery for the next three years, after which time its effect will be negligible. In the meantime, it will provide most of the large fish captured by anglers.

In Figure 1, it will be noticed that walleye in the Kawarthas grow approximately two inches per year. The growth or individual fish, however, is ex-



*Angling success drops appreciably during the summer. Photo by T. Jenkins.*

tremely variable, and a large percentage of fish frequently demonstrate a greater growth rate.

The aim of fishery management is to maintain and (if possible) improve the maximum utilization of a fisheries resource on a sustained yield basis consistent with the other uses of the water. To accomplish this objective, the fishery manager possesses a number of tools:-

1. Regulation.
2. Environmental improvement.
3. Stocking.
4. Control of fish populations.
5. Creation of more fishing waters.

The use of these tools is analagous

to the use by a carpenter of a saw on one job and a level on another. In the same way, a fishery manager may use stocking on one lake and habitat improvement on another. On a third lake, he may find it advantageous to use both. It is significant that no specific tool will produce the desired result on all lakes. Thus, fact-finding programs are important because they help the fishery manager to determine which tool should be used.

So, when you meet the little red-and-white patrol boat on one of your favourite Kawartha Lakes, remember that it's there for your benefit.



*The weighing-in at the bow-fishing derby.*

## BOW—FISHING FOR ST. LAWRENCE CARP

*By R. Lorne Irvine*

*Fisheries Management Officer, Kemptville Forest District*

*(Photos by the Author)*

Bow fishing for carp is a relatively recent sport in southeastern Ontario, but the two principals, the archer and the carp, are certainly not new to the area.

Little needs to be related concerning the history of the bow and arrow, as its use in North America long preceeded the arrival of the European. It is indeed quite possible that Columbus was greeted with a twenty-one bow and arrow salute as he made his famous landing. For proof, one needs only to view any of the myriads of TV westerns to find ample evidence of the use and effectiveness of this weapon.

The recorded history of carp extends back to 475 B.C. when the Chinese were known to have cultured them. The first introduction attempt in North America is believed to have been in the early 1830's. By the latter part of the nineteenth century, it had been planted in Ontario. It is now well established in shallow, weedy areas throughout the Great Lakes system.

Carp spawn in shallow, marshy areas during the period, early May to the end of July, and are most active during the daylight hours of warm, sunny days. This, along with their large size (up to 50 pounds, averaging three to seven pounds, but with five to ten pounds common) and the nature of their spawning activities near the surface, frequently with their dorsal fins and backs breaking the water surface, makes them particularly vulnerable to the bow and arrow.

While carp can be taken by angling,

they are not relished as a food fish by most Canadians and have attracted little interest from sportsmen. Thus, when active archers requested permission to take the unharvested carp with bow and arrow, the Department was readily agreeable.

In June of 1963, through the co-operation of the St. Lawrence Parks Commission, a mile of marshy shoreline adjoining Riverside Park on Lake St. Lawrence was made available for this sport. Approximately fifty archers from Ottawa and the Seaway valley took advantage of an experimental season which was established. From this sprang the idea of an international Carp Bow Fishing Derby in 1964.

Because of the keen interest shown in this sport in 1963, a three-month season was established in 1964 in the parts of Lakes St. Lawrence and St. Francis fronting the counties of Dundas, Stormont and Glengarry. Officials and members of the Seaway Valley Archers Club organized what is believed to be the first International Bow Fishing Derby to be held in Canada. Twenty-three archers registered for the first two-day Derby and harvested 710 carp weighing a total of 3,580 pounds.

The Derby became an annual event, and in 1966 the number of entrants increased to 87 archers. During the first three years, a total of 2,505 carp, weighing 17,095 pounds, were landed by the contestants. Also, interest spread to the Long Sault Conservation Club who under-



*Three keen bow-fishermen. Note the reel on the bow.*

took the task of measuring, weighing and scale-sampling the fish and forwarding this information to the Department as one of their projects.

In the Derby, archers usually use a laminated wood and fibreglass bow with a 40-, to 50-pound pull. The arrows are of a heavy, solid fibreglass with rubber feathers and a hooked steel head. To retrieve the arrow (with or without the fish, depending on accuracy) about 25 yards of 90-pound-test braided line is attached to the head of the arrow, run back along the shaft through a hole in the nock end, and then handwound onto a reel fastened to the bow. The reel is designed to allow the line to run off freely--similar to an open-faced spinning reel.

Unlike most of the usual hunting and

fishing activities, bow fishing attracts almost as many women as men. Contests and derbies have classes, trophies and prizes divided fairly equally among the sexes. Many archery club members are husband-and-wife teams.

Interest in this sport, as indeed in archery in general, is steadily increasing. Bow fishing seasons have gradually been extended to include all of the counties adjoining Lake Erie and Lake St. Clair, as well as the St. Lawrence River, the Ottawa River below Ottawa, and the eastern end of Lake Ontario.

It is expected that the enthusiasm for this sport will grow in other parts of Ontario in the future and will lead to more effective use of these under-utilised fishes.



*A part of the large harvest of carp taken by bow-fishermen.*





